



## SSAB LASER 355C PLUS

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#### General Product Description

The hot-rolled structural steel ideal for laser cutting and cold forming at 355 MPa  
 SSAB Laser® 355C Plus is the optimal steel for laser cutting and cold forming, with guaranteed flatness after laser cutting.

Part of the SSAB Laser® Plus range of steels, SSAB Laser 355C Plus is produced with a well-balanced and consistent chemical composition, accurate hot rolling process, and optimized temperature control to create a uniform and smooth microscale surface. This microscale surface, together with dead-flat technology, makes SSAB Laser 355C Plus the ideal choice to achieve faster laser cutting speed and cost-efficient use of material when nesting components together. SSAB guarantees a flatness tolerance of  $\leq 3$  mm/m after laser cutting.

SSAB Laser 355C Plus meets or exceeds the requirements of S355K2C+N in EN 10025-2. Upon agreement, it can be delivered double certified and CE marked.

Sheets are delivered with Laser Plus tolerances, exceeding the requirements of EN 10051. Plates are delivered with SSAB Laser Plus tolerances, exceeding the requirements of EN 10029.

#### Dimension Range

SSAB Laser 355C Plus is available in thickness of 3.00- 30.00 mm and widths up to 1860 mm as cut to length or 3300 mm as plate. Length up to 16 meters as cut to length and 15 meters as plate.

#### Mechanical Properties

Delivery form	Thickness (mm)	Yield strength $R_{eh}$ (min MPa)	Tensile strength $R_m$ (MPa)	Elongation A (min %)
Cut Length	3- 15	355	490- 610	20
Heavy Plate	8- 30	355	490- 630	20

The mechanical properties are tested transverse to the direction of rolling.

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## Impact Properties

Longitudinal Test Temperature	Longitudinal Test Impact Energy
-20 °C	40 J

Impact strength is tested by the Charpy V test in accordance with EN ISO148-1:2010. Impact energy value 40J is guaranteed for test piece size 10 x 10 mm. When testing thickness <10 mm, the width of the test pieces correspond with the plate thickness. The values decrease in direct relation to the surface area of the test piece. No impact tests are carried out for thicknesses < 6 mm.

## Chemical Composition (Ladle analysis)

Delivery form	C (max %)	Si (max %)	Mn (max %)	P (max %)	S (max %)
Cut Length	0.18	0.03	1.6	0.020	0.020
Heavy Plate	0.2	0.03	1.6	0.020	0.020

All SSAB Laser Plus steels are aluminum-killed (Al ≥ 0.015%) and grain-refined. Additionally, niobium (Nb), vanadium (V), titanium (Ti) and/or boron (B) may be used as single alloying element or in any combination.

## Carbon Equivalent Values

Thickness (mm)	3 - 30 mm
CEV max	0.45

$$CEV = C + \frac{Mn}{6} + \frac{Cr + Mo + V}{5} + \frac{Cu + Ni}{15}$$

## Tolerances

SSAB Laser Plus is delivered with SSAB Laser Plus tolerances, with improved guarantees compared to corresponding EN standards. More details are available at SSAB.com

### Thickness

**Cut to length:** SSAB Laser Plus thickness tolerances correspond to 2/3 of EN 10051:2010 as default value. After special agreement, tolerances down to 1/3 of EN 10051:2010 can be delivered for certain products and dimensions.

**Plate:** SSAB Laser Plus is delivered with tolerances that correspond to ¾ of EN 10 029:2011 as default value.

### Length and Width

**Cut to length:** SSAB Laser Plus tolerances for width and length are according to SSAB standard and offer narrower width and length tolerances compared to EN 10051:2010.

For coil and sheet with mill edge, the width tolerances are corresponding to -0/+20 mm.

For coil and sheet with cut edge, the width tolerances are corresponding to -0/+2 mm.

After special agreement, tighter tolerances can be delivered for certain products and dimensions.

Length tolerances only apply for cut to length sheets.

**Plate:** Width tolerances are -0/+4-10mm depending on the thickness. Length tolerances are -0/+15-25mm depending on length.

### Shape

**Cut to length:** SSAB Laser Plus is delivered with shape tolerances according to EN 10051:2010. Narrower tolerances according to the SSAB standard are available on request.

**Plate:** According to EN 10 029:2011.

### Flatness

**Cut to length:** SSAB Laser Plus tolerances can thanks to dead-flat technology be delivered with a guarantee of flatness tolerance of

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$\leq 3$  mm/m after laser cutting, in addition to  $\leq 3$  mm/m when delivered. SSAB Laser Plus tolerances always exceed EN 10051:2010 in flatness requirements.

Flatness guarantees only apply for cut to length sheets.

**Plate:** SSAB Laser Plus tolerances guarantee a maximum flatness deviation of 3 mm/m after laser cutting.

## Surface Properties

According to EN 10 163-2 Class A, Subclass 3.

## Delivery Conditions

SSAB Laser 355C Plus is delivered in normalized rolled condition.

Surface and edge condition

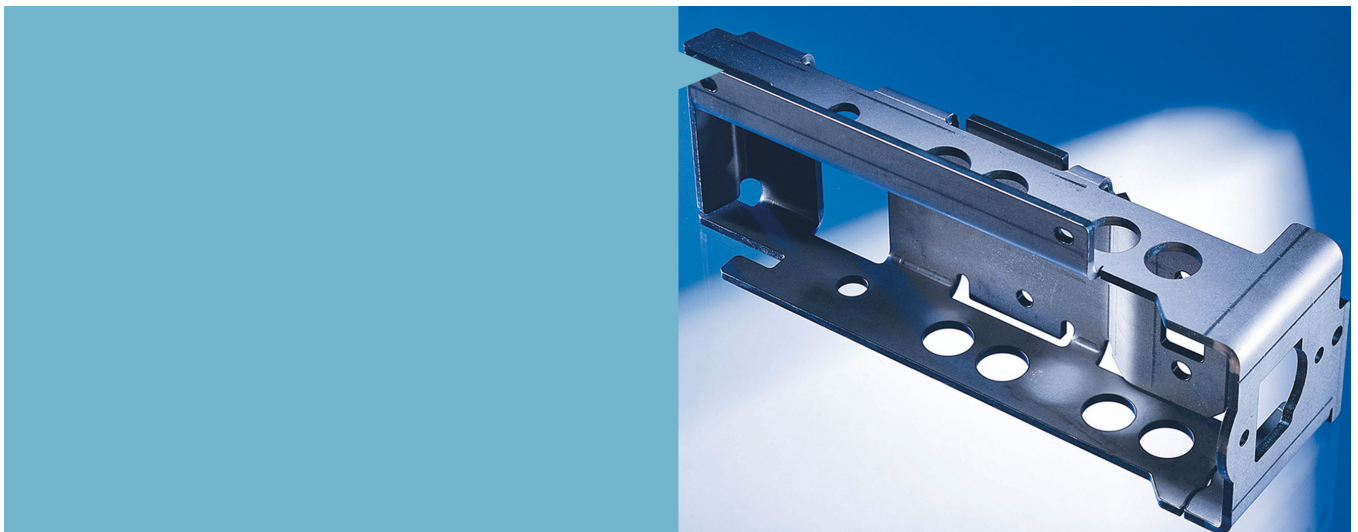
SSAB Laser 355C Plus is available as non-pickled or pickled surface with mill or cut edge.

## Fabrication and Other Recommendations

SSAB Laser 355C Plus has ideal laser cutting, cold forming and welding performance.

For information concerning fabrication, see SSAB's brochures on [www.ssab.com](http://www.ssab.com) or consult Tech Support, [techsupport@ssab.com](mailto:techsupport@ssab.com).

Appropriate health and safety precautions must be taken when bending, welding, cutting, grinding or otherwise working on the product.



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